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**REMARKS**

Reconsideration of claims 1-36, as amended herein, is respectfully requested. Claims 1, 11, 13, 27, 32 and 35-36 are amended to clarify the nature of the claimed invention and respond to the Examiner's comments in the Office Action. A marked-up version of the amended claims, indicating all changes made to the claims is presented above.

In the Office Action dated August 1, 2003, Examiner rejected claims 1-26 under 35 U.S.C. § 103, as being unpatentable over Wolcott et al. (USP 6,317,583) in view of Zhao et al. (USP 6,332,069), and rejected claims 27-36 under the same statute over over Kortaitim et al. (USP 6,370,117) in view of Wolcott et al. In the comments, on page 5 of the Office Action, the Examiner noted that another patent, Perahia (USP

6,188,896), "teaches sub banding." Perahia reference was made of record, but was not relied upon in formulating the rejection under 35 U.S.C. § 103.

The applicant respectfully traverses the Examiner's rejection of the pending claims 1-36 and points out several distinctive features and differences of the claimed invention that are neither anticipated nor rendered obvious by the cited prior art references. The claims are amended to clarify and emphasize these differences.

Wolcott et al. describes a method and apparatus for mapping feeder link to mobile link beams on a transponding satellite. Unlike the current invention, this mapping is based upon a predetermined frequency plan. It's primary objectives and features are directed to avoiding interference between adjacent beams, beam handovers without changing assignments or channelizer switch settings, and elimination the need for on-board state coordination or switching, and providing connectivity from the feeder link to all mobile bands in all beams.

Zhao et al. discloses a method for selecting the number of slots to offset a TDMA receive and transmit frames. This is done to lower the probability of slots that will be come unusable because of guard times need to accommodate differential propagation delay. The criteria is based upon the known location of a satellite mobile earth station (MES) within the coverage pattern of a geostationary satellite and the differential propagation delay characteristics if each spot beam. Each spot beam is

logically divided into overlapping adjacent "zones". In each zone, a fixed receive to transmit offset is used. A set of channels (called a carrier group) is assigned to each zone. The channel to be used by a particular MES is determined using previously known MES location.

Koraitim et al. describes a method for adaptive allocation of a single communications channel among Constant Bit Rate (CBR) and Variable Bit Rate (VBR) traffic. This concept is called a dynamically controlled boundary policy, and it controls the servicing of different queues associated with each type of traffic. The algorithm uses the various queue sizes and the Quality of Service requirements to determine how much of each type of traffic should be placed onto the communications channel.

Perahia et al., which is not relied upon in the rejection, but is noted as prior art by the Examiner describes an invention to control the communications antenna patterns to minimize the amount of interference.

One important difference between the current invention and these cited prior art references is the meaning and use of the term "subband" and "subbanding." All cited references refer and use this term in a traditional manner to refer to mutually exclusive, contiguous pieces of frequency spectrum within a larger allocation. In contrast, the current invention describes and defines this term to refer to a set of channels from which the operational assignments can be made to the MES in a particular

regulatory jurisdiction. See Specification at page 9, line 26 - page 11, line 25; *see also* page 2, line 25- page 3, line 15 and page 1, lines 27-30. Thus, the claimed invention simultaneously provides channel assignments to MES in multiple countries, according to differing regulatory constraints. A list of preferable, but non-exclusive, criteria and rules for defining a "subband" in accordance with the current invention is described at page 10, lines 5-10 of the Specification. Thus, contrary to the suggested teachings and the use of this term in the cited references, the "subbands" in accordance with the current invention need not, and in fact are not, mutually exclusive areas of the spectrum. Accordingly, the amended claims are patentably distinct from the cited prior art reference based on the use and application of "subbanding," as this term is used and applied in accordance with the current invention.

It should also be noted that the approach to defining "subbands" and uplink channel selection according to the teaching of the current invention has important functional implications in that it allows operation of the satellite uplinks in the presence of the uncontrolled usage from the terrestrial systems. None of the cited prior art references describe, teach or suggest, either alone or in combination, a method for selecting uplink channels in the presence of time varying interference from the terrestrial systems.

Another distinctive feature of the claimed invention is that unlike the

teachings in Wolcott and Zhao, it provides a means to identify and compensate for differential frequency and time of arrival arising from low-Earth Orbit spacecraft dynamics, without prior knowledge of the MES location. See page 8, line 23 - page 9, line 13 of the Specification.

Finally, the current invention, particularly as recited in the pending claims 27-36, includes a mechanism or method for changing the packet size being processed by each receiver. Contrary to the Examiner's arguments, the applicant respectfully points out that none of the cited prior art references anticipates or renders this obvious. Unlike the current invention that carries only "bursty" traffic of different message lengths, Koraitim et al. describes and deals with a channel service for two very different types of traffic (constant and variable bit rate, CBR and VBR traffic). To resolve this problem, Koraitim suggests allocating a virtual channel boundary that divides the VBR and CBR traffic, and changing the state of the channel based upon observation of the separate queues (shown in Fig. 2 of Koraitim) at the input of the channelizer. In contrast, the method utilized by the current invention is based upon observation of the channel activity of the entire population of emitters and incoming traffic, and determines which message size of two (or more) packet sizes for the "bursty" traffic to send to a receiver.

In view of the foregoing, applicant respectfully submits that claims 1-36 are patentably distinct over the applied references, and are in condition for allowance.

Applicant hereby respectfully requests entry of this Amendment and an early favorable action on the merits.

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail under 37 C.F.R. 1.10 in an envelope addressed to:

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DATE: February 2, 2004

NAME: Daniel Basov

SIGNATURE: Daniel Basov

Respectfully submitted,

By Daniel Basov

Daniel Basov, Esq.

Reg. # 42,303

Chadbourne & Parke LLP  
30 Rockefeller Plaza  
New York, New York 10112  
(212) 408-5275

Attorneys for Applicant

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